Contribution ID: **14** Type: **Oral Presentation**

Exploring Physics Student Graduate Preparedness vis-à-vis the 2018 SAIP Benchmark Statement

Tuesday, 2 October 2018 09:30 (20 minutes)

The 2018 SAIP Benchmark Statement (SAIP 2018, 22-23) has many similar fundamental "graduate attributes" to the British (IOP 2014) and the American (American Association of Physics Teachers 2011; American Center for Physics 2014; Heron and McNeil 2016) benchmark statements. Some of these graduate attributes are extremely difficult to evaluate in terms of implementation practices (how these get written into module descriptors and how teachers implement these) and how student experience these SAIP intended attributes. These are difficult to evaluate because they deal with human capabilities as a function of physics knowledge and working practices both in physics and in society. Of particular relevance for this presentation are the recommended ethical, communicative, problem solving, ICT, analytical, investigative, and personal skills (see p.22, SAIP 2018).

The presentation will propose a novel methodological way of doing this that has empirical components that are built on substantive theorizing of Human Capability (Alkire and Black 1997, 263-279; Fraser and Greenhalgh 2001, 799-803; Hart 2012, 275-282) rather than on rhetorical statements. This approach will be illustrated with case study data collected from one of South Africa's leading departments of physics, and the implications of such research outcome will be discussed.

Key words: SAIP Physics benchmark statement, Human Capability, graduate attributes, novel methodology.

`References`

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Primary author: Mr AUDU, Bako Nyikun (University of the Western Cape)

Presenter: Mr AUDU, Bako Nyikun (University of the Western Cape)

Session Classification: Parallel Session 1

Track Classification: Track A - Physics at University